

IN THE SPECIFICATION

Amend the last paragraph starting on page 2:

FIG. 20 schematically shows the skeletal structure of a vehicle front end portion representing a conventional vehicle body structure. As shown in FIG. 20, an underframe 102 is formed as a continuation of a vehicle body floor (passenger compartment) 101, and a bumper 103 of a U-shape in a plan view is fixed to a front portion of the underframe 102. On the other hand, a front end roof frame 105 of a U-shape in a plan view is fixed as a continuation of a vehicle body roof 104, and the front end roof frame 105 and the bumper 103 are connected together by a plurality of front beams 106 and side beams 107. The front beams 106 and the side beams 107 are connected by connecting beams 108. In this manner, a front gable portion 109 is composed of the underframe 102, bumper 103, front end roof frame 105, and beams 106, 107 and 108. An outer wall 111 of FRP is attached to the outside of the structure thus formed from the skeleton.

Amend the paragraph starting on page 15, line 18:

FIG. 1 is a schematic view of a skeletal structure of a vehicle front end portion representing a vehicle body structure according to a first embodiment of the present invention. FIG. 2 is a sectional view taken on line II-II of FIG. 1. FIG. 3 is a sectional view taken on line III-III of FIG. 1. FIG. 4 is a schematic perspective view of an underframe front end portion. FIG. 5 is a plan view of the underframe front end portion. FIG. 6 is a sectional view taken on line VI-VI of FIG. 4. FIG. 7 is a sectional view taken on line VII-VII of FIG. 4. FIG. 8 is a sectional view taken on line VIII-VIII of FIG. 5. FIG. 9 is a schematic view showing a deformed state of the vehicle front end portion at the time of a head-on collision. FIG. 10 is a plan view of the underframe front end portion showing a deformed state of a cushioning member at the time of a collision. FIG. 11 is a side view of a vehicle. FIG. 12 is a front view of the vehicle. FIG. 13 is an essential vertical sectional view of a front gable portion representing a vehicle body

structure according to a second embodiment of the present invention. FIG. 14 is an essential vertical sectional view of a front gable portion representing a vehicle body structure according to a third embodiment of the present invention. FIG. 15 is a schematic view of a skeletal structure of a vehicle front end portion representing a vehicle body structure according to a fourth embodiment of the present invention. FIG. 16 is a sectional view taken on line XVI-XVI of FIG. 15. FIG. 17 is a sectional view taken on line XVII-XVII of FIG. 16. FIG. 18 is an essential sectional view showing a deformed state of a cushioning member at the time of a collision. FIG. 19 is a perspective view of a cushioning member showing a vehicle body structure according to a fifth embodiment of the present invention. FIG. 20 (prior art) is a schematic view of a skeletal structure of a vehicle front end portion representing a conventional vehicle body structure. FIGS. 21(a) and 21(b) (prior art) are schematic views showing a deformed state of the conventional vehicle body structure at the time of a head-on collision.

Paragraph starting at page 22, line 4:

A roof body is provided on both sides of the underframe 33 via side grooves (not shown). A roof frame 42 of a U-shape is fixed to a front end portion of the roof body, and connecting beams 44 are constructed between a roof transverse beam 43 and the roof frame 42. An outer bumper 45 of a V-shaped cross section is fixed outwardly of the inner bumper 32 with a predetermined gap. The outer bumper 45, almost like the aforementioned inner bumper 32, is composed of a central portion 45a, and side portions 45b formed obliquely and integrally on both sides of the central portion 45a. A plurality of holes 45c as buckling strength changing means are bored in opposite side portions of the central portion 45a and in the side portions 45b. A reinforcing material 46 is fixed to the upper surface of the central portion 45a. Left front beams 47, 48 and right front beams 47, 48 as a pair having an L-shaped cross section, and left and right side beams 49 as a pair having a \sqsupset -shaped cross section are constructed between the roof frame 42 and the outer bumper 45, and the end portions of these beams are fixed to the roof frame 42

and the outer bumper 45 by welding. The front beam 48 and the side beam 49 on each of the right-hand and left-hand sides are connected together by a connecting beam 50, and a plurality of holes 50a are formed in a bending portion of the connecting beam 50. The numeral 51 denotes a reinforcing bracket for connecting the front beams [[47,]] 48, the outer bumper 45 and the floor board 34 together.

Paragraph starting at page 33, line 14:

In detail, as shown in FIG. 10, when an impact force in a collision is inputted to the front gable portion 13 from a rightward oblique direction, the right side portions 32b, 45b of the bumpers 32, 45 are pushed and buckled, and the reinforcing beam members 35, 37 on the right side are buckled and bent. Also, the impact force in the collision is obliquely inputted to the crash portion 40d of the cushioning member 40, directly or indirectly via the bumpers 32, 45. In this case, the cushioning member 40 is about to be toppled leftward (toward the cushioning member 39) by the impact force inputted obliquely. However, the crash portion 40d of the cushioning member 40 is connected to the crash portion 39d of the cushioning member 39 by the connecting rod 41b, so that a deterrent force works there, inhibiting the toppling of the cushioning member 40. Besides, the crash portion 40d of the cushioning member 40 is about to be bent relative to the body 40b by the impact force obliquely inputted to the crash portion 40d. However, the reinforcing bracket 40c is interposed between the crash portion 40d and the body 40b, and the reinforcing bracket 40c disposed at the base end portion of the ~~crash portion 40d~~ body 40b is mounted to the connecting bracket 41a to form a sturdy structure. A deterrent force acts there, inhibiting the bending of the crash portion 40d.

Paragraph starting at page 39, line 7:

The crash portions 81d, 82d function as vertical restraining members for inhibiting vertical displacement when they collide with the crash portions of the cushioning members of the

other party in a collision of the vehicles 11. The crash portion comprises a hollow box 84 in which side wall portions 84b are integrally formed on the four sides of a bottom 84a, a closure 84c is fixed to the front surface, and a plurality of (two in the present embodiment) horizontal engagement plates 85 are fixed at predetermined intervals. A reinforcing bracket 86 fixed to the front end portions of the bodies 81b, 82b of the cushioning members 81, 82 is tied to the bottom 84a of the box 84 of the crash portions 81d, 82d by a plurality of bolts 87. That is, when the crash portions 81d, 82d collide with the crash portions 81d, 82d, the closures 84c are deformed, and the engagement plates ~~[[84]]~~ 85 engage each other, thereby inhibiting vertical displacement. In this condition, the mounting areas of the crash portions 81d, 82d are not deformed, while the bodies 81b, 82b buckle in the longitudinal direction and can absorb the impact force.

Paragraphs starting at page 40, line 18:

The thus configured rubber-tired new traffic vehicle 11 is operated smoothly and safely in an unmanned manner by the operation management system. However, if control instruments fail, various manual operations and manipulations by the driver are possible. In this case, the travel speed is limited to a low speed. In the case of such a manual operation or manipulation of the vehicle 11 by the driver, a collision accident to the vehicles 11 may occur owing to an erroneous operation or the like. Thus, as stated above, the front gable portion 13 and the rear gable portion 14, which serve as the crush zones, are formed ahead of and behind the passenger compartment 12, and the cushioning members 81, 82 are mounted below the front gable portion 13 and the rear gable portion 14. Furthermore, the vertical displacement of the cushioning members 81, ~~[[81]]~~ 82 is inhibited so that the cushioning members 81, 82 are not displaced relative to the counterparts, but are buckled longitudinally and can absorb an impact force properly, when the vehicles 11 collide. For this purpose, the crash portions 81d, 82d attached to the front end portions of the cushioning members 81, 82 are constituted by fixing the plural horizontal engagement plates 85 at predetermined intervals within the box 84.

In detail, when the front gable portion 13 (rear gable portion 14) is crushed as the crush zone in a collision of the vehicles 11, the impact force in the collision enters the outer bumper 45 from the outer wall of FRP, is admitted into the front beams 47, 48 via the straight portions 47a, 48a, and is inputted to the crash portions ~~39d, 40d~~ 81d, 82d of the cushioning members ~~39, 40~~ 81, 82. Under these conditions, the central portions 32a, 45a (reinforcing material 46) of the bumpers 32, 45 are pushed, and the opposite side portions 32b, 45b are buckled in the longitudinal direction by the plural holes 32c, 45c. Also, the side reinforcing beam members 35 are buckled and bent into deformation by the plural holes 35c, as are the central reinforcing beam members 37 by the front beams 37b, and as are the connecting beams 50 by the plural holes 50a. Moreover, the cushioning members 81, 82 collide with the counterparts to start longitudinal buckling.

Last paragraph on page 42:

In the above embodiment, the cushioning members 81, 82 are constituted by fixing the crash portions 81d, 82d to the front ends of the bodies 81b, 82b, and connecting the crash portions 81d, 82d by the connecting rod 83. However, this structure is not limitative. In the present embodiment, as shown in FIG. 19, the crash portion of the cushioning member and the connecting rod are formed integrally. That is, a body 91a of a cushioning member 91 is in a square tubular shape, and has a plurality of openings 91b formed therein. A base end portion of the cushioning member 91 is fixed to a vehicle body (not shown). A connecting rod 92 is in a hollow shape in which a crash portion 92a and a connecting portion 92b (present on both sides of the vehicle body as a pair) are integrally formed. The back of the crash portion 92a is fixed to the front end of the cushioning member ~~[[92]]~~ 91 by bolts 93, and two horizontal engagement plates 94 are fixed at a predetermined distance within the crash portion 92a. The connecting rod 92 is closed with a closure fixed to its front surface, but the closure is not shown for deep understanding of the interior.